



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/817,403

04/01/2004

Kurt Burger

10191/3687

3199

26646 7590 04/15/2009

KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

EXAMINER

LESLIE, MICHAEL S

ART UNIT

PAPER NUMBER

3745

MAIL DATE

DELIVERY MODE

04/15/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/817,403	Applicant(s) BURGER ET AL.	
	Examiner MICHAEL LESLIE	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 21-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 21-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the quad-ring (claims 34-36) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 3745

Claims 24 and 36-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "high" and "low" in claim 24 are relative terms which render the claim indefinite. The terms "high" and "low" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The degrees of abrasion resistance and friction have been rendered indefinite.

Claim 36 recites "the sealing elements include an x-ring", which according to Page 5, Lines 37-30 are the same as a "quad-ring" claimed in claim 34, thus making claim 36 a substantial duplicate of claim 34.

Claim 37 is a broader recitation of previously presented claim limitations (from claim 1), thus broadening claim 1.

Regarding claim 37, the recitation "(dry)" renders the claim indefinite because it is unclear whether the limitation is part of the claimed invention.

Claims 38-40 are rejected due to their dependence from claim 37.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, and 21-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over in Kingsford et al (6079959) view of Massler et al (DE 10018143).

Kingsford et al discloses a pump device having a metal piston (208) and an elastomeric sealing element (266) made of viton. Kingsford et al does not teach that at least one of the piston and seal are coated with a coating containing of at least one of halogen-, silicon-, carbon-containing, and metal-organic monomers, wherein the coating includes an inner adhesive layer including one of chromium and silicon, at least one intermediate layer including one of chromium, tungsten, silicon, and carbon, and one of an outer, metal-free functional layer of diamond-like carbon and an outer, metal-containing functional layer including tungsten carbide.

Massler et al discloses a coating for a pump device having at least one of a piston and sealing elements to seal the pump piston (paragraph [0003]), the at least one of the pump piston and sealing elements having a coating containing of at least one of halogen-, silicon-, carbon-containing, and metal-organic monomers, wherein the coating includes an inner adhesive layer including one of chromium and silicon, at least one intermediate layer including one of chromium, tungsten, silicon, and carbon, and one of an outer, metal-free functional layer of diamond-like carbon and an outer, metal-containing functional layer including tungsten carbide (see Abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the coating of Massler et al to the pump device having a metal piston and elastomeric sealing element made of viton such that the coating is disposed on the piston and seal of Kingsford et al for the purpose of improving efficiency and wear resistance.

Art Unit: 3745

Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kingsford et al (6079959) view of Massler et al (DE 10018143) as applied to claim 1 above, and further in view of Harada (5577896).

Kingsford et al, as modified, discloses a pump device as described above, but does not teach that the sealing element is a quad-ring having concavely shaped surfaces and four annularly integrated sealing lips.

Harada discloses a pump having a piston (440) and sealing element (446) wherein the sealing element is a quad-ring having concavely shaped surfaces and four annularly integrated sealing lips.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the pump device of Kingsford et al, as modified, to have the sealing element be a quad-ring having concavely shaped surfaces and four annularly integrated sealing lips as taught by Harada for the purpose of improving sealing performance.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL LESLIE whose telephone number is (571)272-4819. The examiner can normally be reached on M-F 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ML
April 10, 2009

/Michael Leslie/
Primary Examiner, Art Unit 3745